US Army Corps of Engineers ®

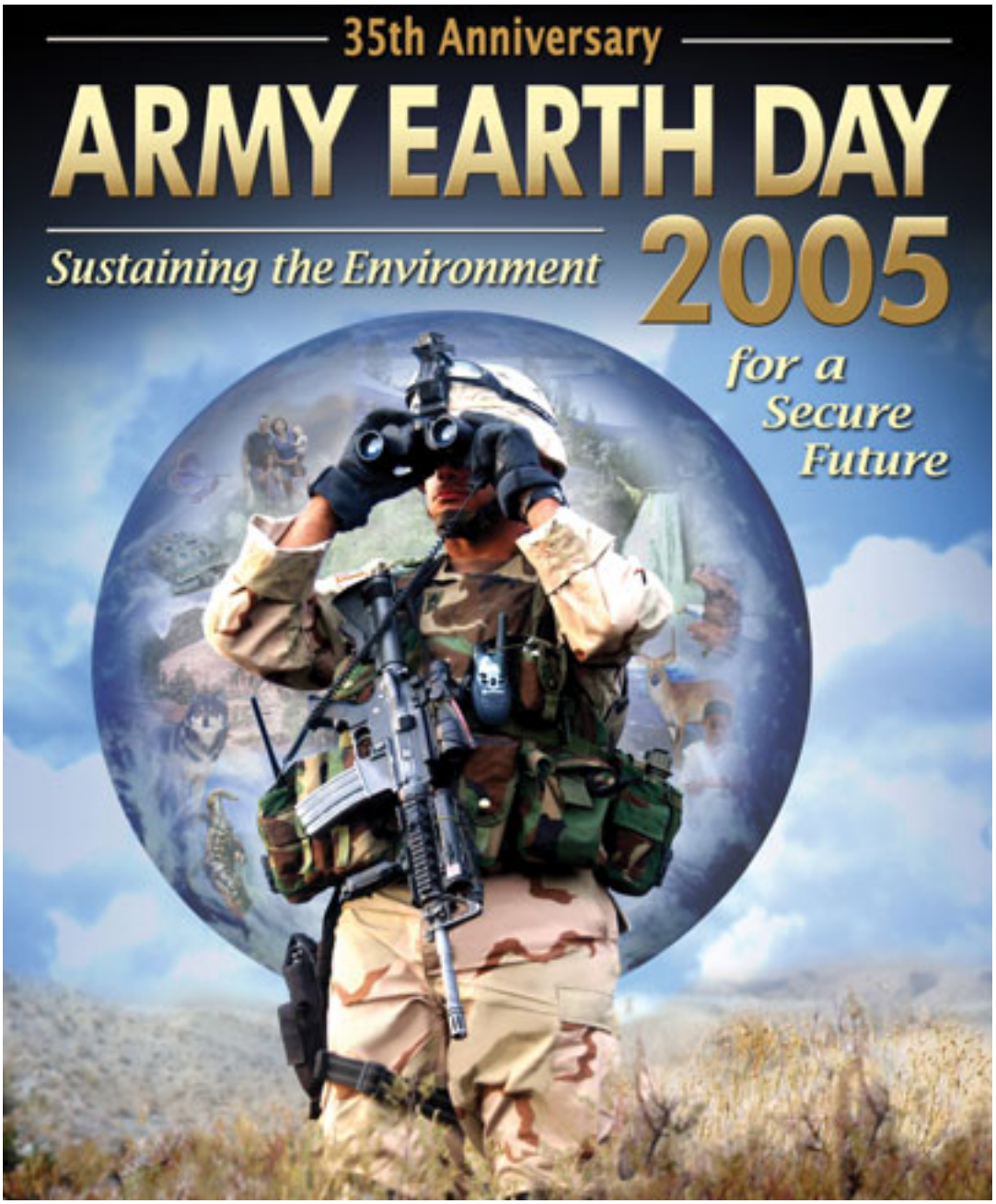
The Corps Environment

April 2005 Vol. 6, No. 2

Corps celebrates Earth Day 2005

On April 22, Corps employees will join millions of others in celebrating the good things we do for our planet, marking the 35th anniversary of Earth Day. I encourage each and every one of you to join in the celebration.

The Army's theme for this year's celebration is "Sustaining the Environment for a Secure Future." It draws on the new *Army Strategy for the Environment*, which was released last fall, a document that complements the Corps' Civil Works Strategic Plan that we unveiled a year ago.



The theme, along with the two strategies, reflects a "commitment to meet the current and future needs of Soldiers, their families, and the nation through the sound stewardship of environmental resources," as Secretary of the Army Francis J. Harvey and Army Chief of Staff Gen. Peter J. Schoomaker noted in their 2005 Earth Day Message.

It's a commitment that we in the Corps have long embraced because we realized that our security depends in part on preventing the conditions that lead to conflict and on helping to create conditions for peace.

When we introduced our Environmental Operating Principles three years ago, a few people thought they were revolutionary. Yes, there were a few new terms, such as sustainability, but the core foundation reflected what we have always sought – to be good environmental stewards and protect our water resources for future generations.

With these principles, we have begun ensuring that we automatically and intuitively consider environmental concerns as we make all our decisions.

It's a challenge, but one that we are definitely equipped to meet, and are meeting, head on. The biggest problem I see is that far too often, people only think about Earth Day one day each year. I can assure you that is not the case with the U.S.

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The Corps Environment

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Environmental Advisory Board schedules meeting

By CANDICE WALTERS
Headquarters, Public Affairs

In June, the board that Lt. Gen. Carl A. Strock calls his "environmental conscience," the Chief of Engineers' Environmental Advisory Board, will conduct one of its two meetings scheduled each year. Although the board is not that well known, the Chief of Engineers says "it plays a key role in contributing to an enhanced mutual understanding between the Corps and both the general public and the conservation community."

Established by Chief of Engineers Lt. Gen. Frederick J. Clarke in 1970, the board is charged with providing independent advice and counsel on environmental issues, in other words, to tell the Chief what works and what doesn't when it comes to the Corps' environmental endeavors.

The board, which has nine members, normally conducts public meetings twice a year. No member is affiliated with the Corps of Engineers and each is appointed for a two-year term.

"The group's charter talks about providing advice on environmental issues and developing policy and procedural recommendations for the Chief of Engineers," said Norman Edwards, the board's executive secretary.

"This group has taken a new direction, transitioning away from providing advice on specific projects, as it has in the past, to looking at ways to help the Chief identify issues of national significance.

"They have looked at independent scientific review and adaptive management as two national issues that could have application for many projects throughout the country," he said.

The Corps' Civil Works Strategic Plan, unveiled in 2004, lays out where the Corps wants to go in the area of environmental restoration, and the Environmental Operating Principles, unveiled three years ago, provide a framework for how the Corps can develop sustainable solutions to the nation's problems.

The EAB members have expressed interest in helping the Corps implement the Strategic Plan and the principles in ways that will increase partnership and collaborative relationships with the environmental community, Edwards said.

And that falls right in line with one of the duties specified in the board's charter: "Contribute to an enhanced mutual understanding and confidence between the Corps and both the general public and the conservation community so that the public will recognize the Corps' roles in, and responsibilities for, sustainable use, stewardship and restoration of our Nation's natural resources."

The charter also reflects Principle No. 7 of the Corps Environmental Operating Principles: "Respect the views of individuals and groups interested in Corps activities; listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the Nation's problems that also protect and enhance the environment."

"So, in a way, you can say the board plays a go-between role, helping the Chief and Corps understand the rest of the world better when it comes to environmental concerns and helping the rest of the world better understand what we, in the Corps, are doing," said Rennie Sherman, chief of the Corps' Policy Branch.

More information about the Environmental Advisory Board can be found at http://www.usace.army.mil/inet/functions/cw/hot_topics/eab.htm.

Earth Day

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Army Corps of Engineers.

Yes, on April 22, you will see Corps employees planting trees, picking up trash and litter from parks, waterways and wetlands, and educating our youth on just what it means to take care of the environment.

But our efforts do not, and will not, end there. All over the world our engineers are sharing the wealth of their environmental experience and ethics with other nations – even in Iraq – where we are helping to restore and protect their precious water resources. Not only do these environmental opportunities promote trust and stability and build capacity that we hope will help build the conditions for peace, but the main reason we perform these environmental tasks is because, again, it's the right thing to do.

Through our Civil Works Strategic Plan, we're seeking, through collaboration, to provide integrated sustainable solutions within watersheds. We're striking more of a balance between the environment and economic development. We're restoring some environmental degradation that occurred from our projects. We're collaborating with and listening to those around us, not just our partners, but our critics as well.

Those are activities that occur every day of the year, not just on Earth Day. They reflect our values, values that not only serve us well, but the Nation as well.

No one government, agency or individual can solve the environmental challenges we face alone. But by working together, through partnerships and collaboration, we can answer those challenges. On Earth Day and every day, we will follow our 200-year-old motto – Essayons!

CARL A. STROCK
Lieutenant General, USA
Commanding

Soil washing proves innovation in remediation

By ED VOIGT
Philadelphia District

U.S. Army Photo

Philadelphia District's Steve Creighton (l) and Jon Dougherty (r) with Carl Seward of ART Engineering at the leach tanks where the iron/arsenic coatings are "washed" off the sand particles using a high temperature water and sodium carbonate.

From 1949 until the early 1990s, the Vineland Chemical Company produced herbicides at a manufacturing facility in Vineland, N.J. The arsenic-based weed killers were commonly applied to fields of cotton, sugar cane, soybeans and other crops.

The manufacturing process generated arsenic-containing salts as a waste by-product. With no means to treat or dispose of these salts, they were stored in uncontrolled piles and lagoons across the approximately 35-acre site.

This practice led to contamination of the underlying soil and groundwater—and eventually of a low-lying nearby marsh, the adjoining creek, the Maurice River (a National Wild and Scenic River), and Union Lake. Arsenic originating from Vineland Chemical has been found as far as 36 miles downstream, near where the Maurice empties into the Delaware Bay.

After some limited attempts to treat wastes on-site, plant operations ceased in 1994—and with the company no longer in business, the site was added to the National Priorities List for cleanup under the EPA Superfund Program.

And as it has so many other times over the past two decades, EPA (specifically, Region 2) turned to the Corps (specifically, Philadelphia District) to plan, design and execute the selected remediation of this site.

As the project evolved, it was subdivided into four phases, or operable units (OU's):

■ OU1 (Plant Site Source Control): Excavation and onsite treatment of contaminated site soils.

■ OU2 (Groundwater Remediation): Pumpout and onsite treatment of the contaminated groundwater directly under and surrounding the site.

■ OU3 (River Areas): Cleanup of contaminated sediments in the nearby stream, marsh and floodplain.

■ OU4 (Union Lake): Cleanup or environmental management of Union Lake downstream.

It was for OU1 that soil washing was selected as the means of remediation, to handle an estimated 268,000 tons of arsenic-contaminated soils.

Just as EPA looks to the Corps for most of the project management, we look to our own contracting community to augment our technical expertise.

Enter Sevenson Environmental Services of Niagara Falls, N.Y., the Corps' prime contractor for Vineland remediation, and its subcontractor, ART Engineering of Tampa, Fla., developer and lead designer of the innovative soil washing treatment system for OU1.

Much of ART's previous experience is in the mining industry, where many of the earthen materials refining and volume reduction processes have proven applicable to this environmental remediation.

In fact, they had already designed and operated other successful soil washing plants on a smaller scale, including one for the removal of chromium, copper and nickel at a Superfund project in nearby Winslow Township, N.J. (In contrast, the Vineland plant is now the largest of its kind in the world.)

For the Vineland design, ART conducted a bench-scale treatability study and process optimization study at the Buffalo, N.Y., laboratory of Sevenson Environmental Services to confirm process design parameters.

Based on these study results, they prepared the process design including specifications for each piece of process equipment. They also prepared an excavation, staging and blending plan to describe how contaminated feed material would be mixed to achieve the desired feed concentration of arsenic (60 to 90 parts per million).

Design of the soil washing treatment plant was completed in December 2002. Sevenson constructed the plant in less than a year and it was up and running in October 2003—the world's first full-scale application of this innovative technology for environmental remediation.

How does it work?

In short, the soil washing treatment plant combines particle size separation processes with a chemical leaching and washing step to effectively remove arsenic contamination from site soils.

The site soils are sandy and contain arsenic in concentrations ranging from less than 20 to greater than 5,000 parts per million. The initial process step uses trommel screeners and vibrating wet screens to remove oversize materials (more than 2 millimeters) from the feed, then hydrocyclones to remove the fine particles ("fines," defined as soils with particle sizes less than 0.1 millimeters). In these soils being treated, oversize materials make up about 2 percent and fines approximately 4 percent by weight.

After removal of the oversize and fines, water is added to the remaining sand particles and the resulting sand slurry is sent through for washing. After being heated to 130 degrees Fahrenheit, the slurry passes through four in-series leaching tanks that mix in several process chemicals, including sodium carbonate, which is the primary washing and leaching agent.

The combination of high-temperature sodium carbonate slurry and the aggressive mixing dissolves the iron and arsenic coatings from the sand particles.

The resulting product is clean sand, with contaminated water as a byproduct that is further processed using pH adjustment and flocculation to precipitate (settle) the dissolved arsenic into

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National center supports Corps ecosystem restoration needs

By DEBBIE QUIMBY
Engineer Research and Development Center

In August 2003, Maj. Gen. Robert Griffin, then acting director of Civil Works, established five planning centers of expertise: inland navigation, deep draft navigation, flood damage reduction, hurricane and storm damage prevention, and ecosystem restoration.

The Corps recognizes the need to plan its projects with the entire affected region or watershed in mind. For example, a navigation and ecosystem project on the Upper Mississippi River will affect the Mississippi River Valley, down to the Gulf of Mexico. Those effects must be taken into consideration in a project's planning stages.

In the area of ecosystem restoration, planners must look at a habitat with an eye toward making it functional and sustainable. The existing habitat may not support the organisms that are present. Invading plants can damage the habitat and be detrimental because organisms cannot feed on those plants. The organisms die off, fish and animals that rely on them as a food source cannot find food, and the cycle continues until the habitat is severely damaged or destroyed.

At the same time, it is important to keep the project area functional for its intended purpose, whether that is navigation, flood control, hydroelectric power, or any number of other functions.

The National Ecosystem Center of Expertise was established to improve the quality and effectiveness of water resources project planning, as well as the quality and timeliness of ecosystem restoration studies by providing services that meet the needs of its customers. It supports Corps ecosystem restoration needs at the national and international levels, interacting with project delivery teams and matching needs with resources.

The Center is under the direction of the Corps' Mississippi Valley Division (MVD) and includes experts from MVD, the Vicksburg District, and the Engineer Research and Development Center (ERDC), who serve on the Center's core Project Delivery Team (PDT).

The Center's responsibilities include:

- Coordinate and have oversight on certification, validation and peer review of planning models for ecosystem restoration
- Provide independent policy and technical review support as requested
- Provide environmental and ecosystem restoration planning consulting services at the PDT's request
- Conduct environmental analytical components of ecosystem restoration planning studies as requested by customers
- Provide advice to Corps headquarters, laboratories and other stakeholders on significant regional and nationwide planning and ecosystem restoration issues
- Assist in establishing research and development priorities in restoration planning
- Coordinate development of training
- Develop and manage a program of 'lessons learned' through coordination with other planning expertise centers, sponsoring workshops, technology transfer, and Web-based support
- Support Corps headquarters in policy compliance review on restoration projects
- Enhance basic planning expertise throughout the Corps by providing or creating development opportunities for employees having specialized ecosystem restoration planning expertise

Rayford Wilbanks is the Center's director and has program oversight and management responsibilities, including roles, development and future vision. David Vigh is the Center's deputy director and is responsible for many day-to-day activities of the Center.

"Approximately 25 percent of the Corps' civil works budget goes toward environmental projects such as the Florida Everglades, Upper Mississippi studies, and the Louisiana Coastal Area study. The Corps must maintain functional operations in these areas while protecting our natural resources," Wilbanks said.

"We look at all facets that act upon an ecosystem. We must ensure the water quality won't harm the plants, that there are enough nutrients to feed the system, and that we not only use the available resources but recycle them," Vigh said.

"This is sometimes difficult to attain but our job at the center is to assist in saving and growing natural resources."

Al Cofrancesco, a technical director in the ERDC Environmental Laboratory, serves as one of two ERDC liaisons to the center as a member of the PDT. "Our job is to facilitate coordination between experts here [at ERDC] and the Center's needs," Cofrancesco said. "This is a great opportunity for us to work together in an area of major importance to the Corps and the nation."

"The ERDC is known for its research mission, and rightly so," Cofrancesco said. "But it's not always about research." Many customers have a need for expertise that can be applied to the operational aspects of a project. There is a wealth of people with expertise and capabilities in ecosystem restoration who need to be married up to solve the customer's needs."

"Our job as Corps team members is to share knowledge with other Corps professionals," Cofrancesco said. "We may have information that isn't research but can be applied to the situation." In addition to specific research projects, ERDC engineers and scientists conduct

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U.S. Army Photo

The Center's efforts in ecosystem restoration planning will help maintain habitat in areas such as the Louisiana Coastal Area.

District aims high for Air Force firehouse

By JAMES CUNNINGHAM
Savannah District

Following the Air Force recruiting motto, "Aim High," the Savannah District aims for sustainable building design certification in the two new firehouses under construction at Seymour Johnson Air Force Base, said Stephen Welch, Military Project Manager for the District.

The program, known as Leadership in Energy and Environmental Design (LEED), requires that buildings include features that benefit the environment. Features are selected from a broad range of environmental goals, including energy and water conservation, pollution reduction, habitat conservation, indoor environmental quality and waste reduction.

"According to the United States Green Building Council (USGBC), only 151 buildings in the United States have LEED certification, only one other for the Air Force, and this will be the LEED-certified project for the District," said Welch.

The two new firehouses accrue "points" for each so-called "green" feature used in construction, Welch said.

"The contractor is obligated by contract to obtain 26 points for the main station and obtain 28 points for the satellite station. These points have to be documented while the building is under construction. At the end of construction, the contractor gives us a notebook documenting all the points for each building. Using 20 percent local materials is one point toward the total of 26 points, for example," said Welch.

Welsh said the U.S. Air Force Air Combat Command informed the district in June 2004 that they wanted to obtain LEED certification for the two firehouses.

Construction scheduled for completion in March 2006 will take an additional two to three months to obtain LEED certification, Welch said.

The USGBC created the LEED certification process to standardize environmentally friendly building qualities, Judy Milton, Savannah District Architect and Sustainable Design Technical Expert for Military Construction, said.

"LEED provides an objective means of determining the extent of sustainability in a building, one that is understood by the public and the design and construction community. It standardizes what constitutes achievement in sustainability," she said.

The success of obtaining LEED certification depends on the contractor and designer of the buildings, said Milton.

"It is a joint responsibility of the designer and the construction contractor, and of course, the user, because they need to design and construct the buildings in the way necessary to achieve certification," Milton said.

For the Air Force, LEED certification will mean several things, including a better quality of life for the airman through improved buildings that are more durable, healthier and less polluting.

"First of all it means that we have actually got a building that meets these environmental goals and depending on which points are pursued, they can be assured that the building performs as it was designed in construction.

"They reap the benefits of these environmental features, be they energy cost reduction, water use reduction, or enhanced environmental features. You will probably see better life-cycle costs; lower utility costs, depending on the points they've taken," said Milton.

The contractor and designer have much to gain from constructing a LEED-certified building as well, Milton said.

"Building a LEED-certified building means something in terms of the contractor's work practices and the scope of his contract, but it is also a good marketing tool.

"Many design and construction contractors know that it is a feather in their cap, because there is an increased demand for environmentally friendly buildings. They can say 'yes, we have built certified buildings'," said Milton.

Building the District's first LEED certified building adds a feather to the Savannah District's cap as well-aiming high for environmental quality.

For more information contact the Savannah District Public Affairs Office at (912) 652-5944.

Artist's rendering of one of two new firehouses under construction at Seymour Johnson Air Force Base, N.C.

Savannah District investigates camp for unexploded ordnance

By JAMES CUNNINGHAM
Savannah District

Savannah District is investigating the former Camp Wheeler, Ga., looking for hidden unexploded ordnance left behind when the camp was turned over to civilian use.

EOD Technology, Inc., from Knoxville, Tenn., is using Global Positioning System technology to locate and map suspected unexploded ordnance.

So far, 14 rounds of unexploded ordnance have been located as part of the investigation, which began last summer. Corps officials said they expect a report detailing the results of the investigation in May and removal actions could begin in late summer pending availability of funds.

Former Camp Wheeler trained soldiers for two world wars before being closed, according to a special report prepared for the Corps by EOD Technology.

Fomer Camp Wheeler is an area of 14,160 acres in Bibb and Twiggs counties, approximately six miles southeast of Macon.

The report indicates that two housing subdivisions are located within the boundaries of the former Camp Wheeler.

"We are not aware of any unexploded ordnance being found near or in either housing subdivision," said Dave Roulo, Savannah District program manager for the project.

The investigation arose from the Formerly Used Defense Sites (FUDS) program, established in 1986. The program cleans up properties that were formerly owed, leased, possessed, or used by the Army, Navy, Air Force, or other defense agencies. The properties are now owned by private individuals, companies or other federal or state agencies.

The U.S. Army Corps of Engineers manages the FUDS program and Savannah District manages the former Camp Wheeler FUDS project.

Photo by Jonas Jorday

Jeremy Duncan, EOD Technology, Inc., uses a hand held GPS device to locate suspected unexploded ordnance.

For more information contact Savannah District Public Affairs Office, (912) 542-5279.

May conference focuses on environment, natural resources

"Strive to achieve environmental sustainability"… "Seek balance and synergy among human and environmental systems that support and reinforce one another"…"Build and share an integrated scientific, economic and social knowledge base that supports greater understanding of the environment and impacts of our work."

These are just three of the seven Environmental Operating Principles guiding all of the U.S. Army Corps of Engineers (USACE) work. But how do Corps managers implement them in the new and changing USACE environment?

Why not register for the biennial USACE Environmental and Natural Resources Conference May 2-5 at the Hyatt Regency Hotel-Union Station in St. Louis? The conference begins the evening of May 2 with a reception and conference registration.

The theme is "Teamwork - Coping with Change in the New Corps Environment". With that in mind, the conference captures issues that are, or soon will be, challenging managers on a daily basis.

The conference follows three key areas: environmental (HTRW), natural resources, and issues common to both.

Key players in each of these three areas will present the latest information to help Corps teams be more successful as they plan the long-term sustainability of the nation's resources, security and economy.

The goal is to raise the synergy level between all aspects of the environment and natural resources management communities of practice at all levels.

The target audience is district and division leaders and managers whose primary function is to deliver environmental and natural resource products and others who show a strong commitment to those functions.

The environmental and natural resources conference concludes at noon on May 5, followed immediately by an eight-hour Operations Project Managers (OPM) Seminar at the same location.

The OPM seminar targets Operations Project Managers and other leaders in the Operations Division. The OPM seminar concludes at noon May 6.

Conference and seminar registration and hotel lodging information are available online through a link at www.mvs.usace.army.mil.

Registration cost for the Environmental & Natural Resources Conference is $125. A separate registration cost for the Operations Project Managers Seminar is $15. These may be paid via credit card or check using the online registration form.

Hotel reservations can be made either online through the conference Web site, or by calling toll free at 1-800-233-1234. The cut-off date is April 4 for the special conference hotel rate of $98 for a single occupancy room.

During the conference, exhibitors will introduce some of the leading products and services specifically focused to help the environmental professional.

If there are specific exhibitors you would like to see invited to the conference, please contact Kaskia-Kaw Rivers Conservancy Chairperson Kathy Niksic at kniksic@consolidated.net.

The Kaskia-Kaw Rivers Conservancy, the conference's cooperating association partner, is coordinating exhibitors and sponsors.

For questions regarding the conference or seminar, contact St. Louis District conference managers Sharon Cotner or Rachel Garren. E-mail addresses are as follows: Sharon.R.Cotner@mvs02.usace.army.mil. Rachel.J.Garren@mvs02.usace.army.mil.

Officials break ground on habitat restoration project

By TIMOTHY DUGAN
New England District

An Oct. 27 groundbreaking ceremony marked the start of the Ninigret Pond Habitat Restoration Project at Charlestown Breachway in Charlestown, R.I. It is the largest salt pond restoration in New England.

The Rhode Island Coastal Resources Management Council and the U.S. Army Corps of Engineers have been working together on the South Coast Habitat Restoration Project since 1997.

One part of the project will restore 40 acres of eelgrass habitat to Ninigret Pond by dredging the flood tidal shoals in the pond to an optimum depth for eelgrass growth.

Eelgrass provides a habitat that is essential for the life cycles of several important fish species. It also contributes to the health and productivity of the coastal ecosystem by filtering harmful nutrients and contributing to the food web.

The project area is located along the south coast of Rhode Island in Washington County and in the town of Charlestown. The specific areas of restoration are located in and adjacent to the breachway in Ninigret Pond and at the juncture of Cross Mills Pond with an unnamed outlet stream that discharges into Ninigret Pond.

"The restoration of Ninigret Pond offers us all a rare environmental opportunity — a chance not just to prevent the destruction of natural habitat, but to roll back the clock and restore what has been lost," said Sen. Jack Reed, who has worked in Congress to secure funding for restoration and preservation.

The total project will cost approximately $2.7 million and be cost shared between the state of Rhode Island and the U.S. Army Corps of Engineers, 35 percent and 65 percent respectively. The project is authorized under Section 206 of the Water Resources Development Act of 1996, as amended, for the purpose of aquatic ecosystem restoration.

The Rhode Island Coastal Resources Management Council is the non-federal sponsor and fully supports the recommended plan. It will share in the costs of project construction as well as future maintenance costs.

The sand from the dredged areas will be used to replenish the nearby beaches. The beaches are eroding and sand that was transported into Ninigret Pond will be returned to the shoreline, providing more protection to the houses along the shoreline in the event of a severe storm.

The project will be maintained by excavating a sediment basin in the Charlestown Breachway. Sand will be captured in the basin instead of entering the pond, ensuring that the restored eelgrass beds are not reburied. The state will maintain the sediment basin by periodic dredging and pumping the sand back to the beaches.

"This is a striking example of an opportunity that resulted in the melding of mission accomplishment, environmental stewardship and community involvement – a win-win across the board and an example for others to emulate," said Timothy R.E. Keeney, Deputy Assistant Secretary for Oceans and Atmosphere, NOAA.

"The Coastal America Partnership supports and encourages these activities."

The Coastal America Partnership is a collaborative effort of federal, state and local agencies working to protect, preserve and restore coastal resources.

Through the Rhode Island Corporate Wetlands Restoration Partnership, Rhode Island businesses have the unique opportunity to work closely with state and federal agencies as well as with environmental organizations on important projects, such as the Ninigret Pond Habitat Restoration Project, that help restore critical water bodies and fish passages.

Benefits of the project will be that 40 acres of eelgrass will be restored in Ninigret Pond, creating essential fish habitat for winter flounder, striped bass, bay scallop, mussel and lobster; new eelgrass beds will help improve water quality in Ninigret Pond by removing harmful nutrients; sand that is filling the channel and burying the eelgrass beds in Ninigret Pond will be returned to the shoreline to create wider beaches; extra sand on the beach will increase storm protection and slow the erosion rate on the developed barrier; and more sand will be available for dune formation, further increasing shoreline protection for beachfront homeowners.

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Photo by Mark McInerney

A local resident enjoys fishing in Ninigret Pond, R.I.

U.S. Army Photo

Lloyd Barkley of the Confederated Tribes of the Umatilla Indian Reservation creates a spear point from obsidian rock in a demonstration of the art of flint napping during a Native American class in northeastern Oregon.

Course provides glimpse into Native American culture

By NOLA CONWAY
Walla Walla District Public Affairs

Lloyd Barkley bends over a piece of black obsidian lying on a piece of leather over his knee. The leather protects him from the sharp, glass-like edges. He intently picks a point on the rock and deliberately strikes at it. As sharp shards of glass-like rock fall to the ground and pieces flake away, a spear point begins to appear.

Barkley, a Pacific Northwest Native American, talks as he works at flint napping, a craftsman making a tool. He reminds the gathered group of U.S. Army Corps of Engineers employees who watch intently as his product takes form that all groups of people have made stone tools; this is a cultural connection we all share. He softly speaks as the spear point begins to take shape.

The natural surroundings, Barkley's words and his actions begin to have the desired effect on the group. With surprising speed and sureness, spear points emerge from the hands of the students. Is this training or an awakening?

For Diane Karnish, chief of Environmental Compliance in the Planning Branch at Walla Walla District, it was an awakening. "The training is the embodiment of the Corps' Environmental Operating Principles. We experienced the culture, walked in their shoes, if only for a week. We gained understanding and appreciation for their culture.

"That is why I think 'Native American Awakening' might be the best description of the event. I became aware and cognizant of a different culture and what the Corps' Environmental Operating Principles truly mean," she said.

Jim Waddell, who developed the course along with Bill Mellick of Walla Walla District and Jeff VanPelt of the Confederated Tribes of the Umatilla Indian Reservation, said he believes it is both. "The training was designed to experience or live an indigenous relationship with nature. The flint napping is but a part of the hands-on doing that allows people to experience the value of being connected to nature and each other.

"Through this and other experiences of humans utilizing nature's fibers, foods, and materials, the tribe is able to shape and awaken an environmental ethos and a deeper understanding of the importance of Native American culture. Having this value will facilitate improved decision making on issues affecting the environment or Native Americans," Waddell said.

The training takes place in east Oregon, high in the Blue Mountains on land belonging to the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). Surrounded by steep hillsides, pine trees and next to Lake Hiyúumtipin' (Indian Lake), students learn about the Cayuse, Umatilla and Walla Walla people who make up the CTUIR. The three bands occupied the area known today as the Columbia River Plateau in Southeastern Washington and Northeastern Oregon.

"We've invited them up to Indian Lake to experience some of the way our people used to live a hundred, hundred-fifty years ago ... and the reason that we're doing this is to let them understand better who we are," said Carl D. Sampson, chief of the Wallulapum band of the Walla Wallas.

"We're the saviors of this earth, I feel. And it's something we want to leave there for seven generations, maybe 14 generations from now. It's something that we all have to learn, or we'll all perish from this earth," he said.

Building understanding and relationships with Native American Tribes, a prevalent stakeholder group throughout the Corps, is the underpinning of the experiential training developed as part of the effort to embrace the Corps' Environmental Operating Principles.

"This training makes the Environmental Operating Principles come alive, makes them real, and gives the participants in the training an understanding of how they can implement the principles in their programs," said Diane Karnish, chief of Environmental Compliance in the Planning Branch at Walla Walla District.

Patricia Rivers, chief of the Corps' Environmental Community of Practice attended the training in October 2003. Rivers said she felt the environment in which the training was offered played a part in the overall experience.

"Because I was separated from my office and daily routine, from my comfort zone, I was much more focused on paying attention to the interchange and more open and receptive to other views and beliefs," she said.

The Corps' Environmental Operating Principles focus on respecting the views of individuals and groups and learning from their perspectives. "What really impressed me about the training given by members of three different tribes was how they live that principle," Rivers said.

"We had the opportunity to observe how the tribes very respectfully shared their differences and similarities in views. We saw how they learned from each other as we learned from them.

"Our Environmental Operating Principles talk a great deal about sustainability and interdependence, again two concepts that Native Americans demonstrate through their traditional practices, ceremonies and shared views and beliefs," she said.

"The training showed us the importance Native Americans put on practicing balance and synergy and the need to sustain resources through renewal so they will be available for future generations. Their traditions and practices demonstrate the interdependence of man and the natural environment, which makes it easier for us to understand why we should do the same."

The Corps' Professional Development Support Training Center has added the Native American Environmental/Cultural Resources Training, course number 950, to its curriculum. The next course will be offered May 17 –20, and registration now is under way.

The course is designed for individuals engaged in environmental or cultural resource assessment or decision making.

For more information about the course, contact Jim Waddell at James.M.Waddell @sad01.usace.army.mil, or to enroll, contact Sherry Whitaker at Sherry.Whitaker@ us.army.mil.

Photo by Nola Conway

Jeff VanPelt of the Confederated Tribes of the Umatilla Indian Reservation explains Native American management of natural resources to class members.

Photo by Nola Conway

Diane Karnish, left, and Cindy Boen, Walla Walla District, take a break from the training to look at Umatilla tribal members' beadwork projects.

Photo by Diane Karnish

Umatilla Indian tribal members show members of the Walla Walla District how a teepee is erected. Class members sleep in the teepees during the training.

Photo by Nola Conway

Patricia Rivers, chief of the Corps' Environmental Community of Practice, examines a tree on the Umatilla Indian Reservation while participating in the Native American training in northern Oregon.

River project brings together Corps, The Nature Conservancy

By JOHN HICKEY
***Hydrologic Engineering Center (on assignment with The Nature Conservancy)* and**
ANDY WARNER
The Nature Conservancy

The U.S. Army Corps of Engineers and The Nature Conservancy are collaborating on a broad array of projects, including reservoir management, dam removal, floodplain and wetland restoration, and coastal zone work. Based on a number of projects, the Conservancy is now the largest nonfederal sponsor for Corps ecosystem restoration projects.

"The Nature Conservancy is one of our most important partners and the Sustainable Rivers Project, with its nation-wide focus, is at the forefront of our collaborations," said Lt. Gen. Carl A. Strock, Chief of Engineers.

The Sustainable Rivers Project (SRP) partners the Corps and the Conservancy in an ongoing effort to reoperate Corps dams to achieve more ecologically sustainable flows, while maintaining or enhancing project benefits.

The SRP is being carried out under a Memorandum of Understanding between the Corps and the Conservancy signed in 2000, and was sparked by an initial collaboration to restore native biodiversity of the Green River in Kentucky by changing the water release schedule from Green River Dam.

"The Sustainable Rivers Project is fundamentally about conservationists and water managers working together to find ways to meet human needs while restoring and protecting some of our nation's most imperiled and important natural habitats.

The Nature Conservancy is extremely enthusiastic about our collaboration with the Corps, and we look forward to extending the SRP to its full potential," said Steve McCormick, President of The Nature Conservancy.

"The SRP is not only demonstrating how sustainability can be incorporated into project planning and operations, it is also bringing to light new opportunities for collaboration in areas such as training and software development. Sustainable Rivers is a shining example of how our Environmental Operating Principles are being put into practice," Strock said.

The SRP currently involves work on nine river systems across the country, with two more under consideration. The nine rivers include the West in Vermont; the Ashuelot in New Hampshire; the Roanoke in North Carolina and Virginia; the Savannah in Georgia and South Carolina; the Big Cypress in Texas and Louisiana; the White, Black, and Little Red Rivers in Arkansas and Missouri; the Green in Kentucky; the Bill Williams in Arizona; and the Willamette in Oregon. Under consideration are the Allegheny in Pennsylvania and the Purgatoire in Colorado.

Today, Green River remains the SRP's most advanced site. The Conservancy first became interested in the Green because of its rich biodiversity, with more than 60 species of mussels (seven endangered and 21 imperiled), 152 species of fish (12 globally rare), and a host of endemic species in a cave system connected to the river.

In 2001, the Corps enacted a three-year interim operational plan designed with the Conservancy to create more natural regimes of flow and stream temperature while continuing to provide recreation benefits and flood damage reduction to downstream communities. This interim plan has been a success.

Local communities are pleased by the extended summer recreational pool, now maintained six weeks further into the fall, and, after three years of altered water management, scientists are finding that many mussel species have reproduced during the reoperation period and are encouraged by this promise for added recovery.

In fact, there is momentum not only to extend the interim plan for the Green River, but also to implement similar changes for other reservoirs in Louisville District.

The Savannah River has followed a different path while developing as an SRP site. The Savannah collaboration began when the Conservancy initiated discussions with Savannah District regarding conservation hopes for the river.

At that time, the District was working on the Savannah River Basin Comprehensive Study, which is addressing current and future needs for flood damage reduction, water supply, fish and wildlife enhancement, drought control, water quality, recreation, and other related purposes.

The District and the Conservancy agreed that the conservation goals and study purposes were complementary and that both were related to the mission of the SRP. The Savannah was later enrolled as a Sustainable Rivers site and the District invited the Conservancy to participate in the Comprehensive Study's planning process, especially by helping to develop ecosystem flow recommendations for the Savannah.

In April 2003, the Conservancy organized

See Conservancy on Page 12

U.S. Army photo

New Savannah Bluff Lock and Dam is shown during the pulse release. When flows in the Savannah exceed 16,000 cubic feet per second, the gates of the structure are raised, which scientists hypothesized would encourage fish passage through the structure.

Big Escambia Creek gets aquatic ecosystem restoration

By JENNY JACOBSON
Mobile District

The Corps' Mobile District is currently constructing an aquatic ecosystem restoration project along Big Escambia Creek, near Flomaton, Ala., and Century, Fla.

The Gulf Coast Resource Conservation & Development (GCRC&D) of Alabama and Florida Three Rivers Resource Conservation and Development Council, Inc. (TRRC&D Council) requested the Corps investigate the degrading Big Escambia Creek aquatic ecosystem under the authority of Section 206 (Aquatic Ecosystem Restoration) of the Water Resources Development Act of 1996, as amended.

It was determined that this unproductive area was generally the result of a two-fold problem. First, along the northern portion of Big Escambia Creek two logjams had diverted base flow conditions causing two new channel cuts and a subsequent realignment.

Only a portion of the northernmost logjam lies within Alabama while the remaining obstructions are in Florida.

The other predicament encountered was within the southern portion of the stream where a high rainfall event combined with a sand and gravel operation encroachment caused the stream to jump its bank and flow west of the original channel through the mined area.

In order to accomplish the restoration project, a team consisting of engineers, biologists, regulators, planners, soil scientists, and other disciplines was formed to identify engineering, biological, and administrative obstacles that might be encountered.

In addition, innovative funding requirements between the two states were developed as a result of the project's locality. The GCRC&D and the TRRC&D Council serve as the non-Federal project sponsors providing 35 percent of the total project costs.

Through the course of addressing these issues, the team remained aware that the proposed project would restore approximately 1,000 acres of productive wetlands and would insure the channel base flow moved freely through the channel downstream to its confluence with the Escambia River.

In addition, discharge from adjacent sandpit areas would be reduced to a level that would not cause additional erosion and thus reduce the sedimentation problem at the mouth of the river as well as increase the productivity and diversity of the area. Over time, the base flow of Big Escambia Creek would revert to its natural channel conditions, benefitting the area by improving the aquatic habitat and reducing upstream flooding.

Mobile District conducted an Ecosystem Restoration Report and developed designs for the engineering of the aquatic ecosystem restoration project based on Rosgen's Stream Morphology principles.

As a result of the project's location in two states, many resource agencies cooperatively worked together in order to make this project a success.

Typically, various entities have their own responsible agenda that may not reflect those of other agencies, so conflicts may arise while planning a restoration project. Permitting agencies, such as the Florida Department of Environmental Protection, the Alabama Department of Environmental Management, and the Northwest Florida Water Management District, participated in numerous meetings to ensure that all concerns were addressed while not conflicting with others' vested interests.

In addition, other local, state, and Federal agencies and private entities provided assistance during the entire planning and engineering phase. Baskerville and Donovan, Inc., was retained by TRRC&D Council to design the southern portion of Big Escambia Creek in cooperation with the Corps' Mobile District.

Innovative thinking, thorough communication, and detailed planning enabled the Corps' Mobile District to accomplish its mission of restoring Big Escambia Creek. The proposed aquatic ecosystem restoration project involved the selective clearing, snagging, and excavating of existing open water channels located west and east of the northern and southern logjams, respectively.

In addition, flow in the existing open water channel was diverted into the original channel by a primary and two secondary diversion structures.

The original channel located along the southern portion of the creek was restored to allow flow to resume. Root wads and logs of sufficient size and quality are being strategically placed along the stream's bank according to Rosgen's principles to provide additional aquatic habitat and streambank protection.

Reverting flows into Big Escambia Creek restores historic wetland habitat while also maintaining hydrologic flows within the creek's channel. In addition, sedimentation influx into Escambia River in Florida's coastal region is significantly reduced, improving water quality prior to it entering the Gulf of Mexico.

With the extensive communication and planning effort and the team's ability to innovatively work together, the Big Escambia Creek restoration project was a success in spite of its complex nature.

For more information contact Mobile District Public Affairs Office at (251) 690-2505.

U.S. Army Photo

The contractor cleared only the area within the restored channel footprint; thus, reducing the number of trees to be cleared and providing equipment with an access road to begin excavating.

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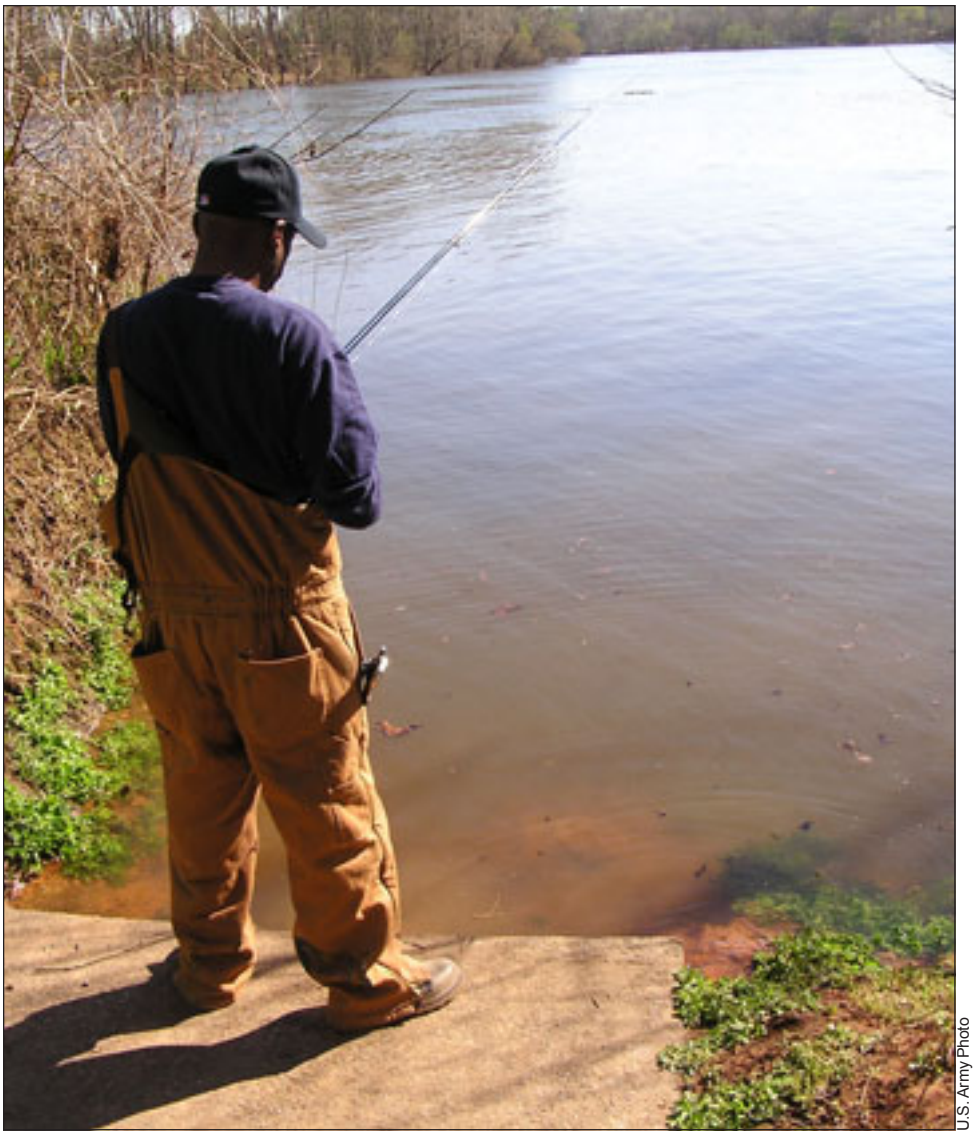
and facilitated a workshop with nearly 50 scientists from a dozen different agencies (including the Corps) to create initial flow recommendations for the Savannah River, floodplain, and estuary.

If fully implemented, the recommendations are expected to help restore and protect 200 river miles, at least 70,000 acres of bottomland forest, and more than 20,000 acres of estuary habitat. The flow recommendations are now one of more than 50 water management alternatives proposed by stakeholders in the Savannah Basin.

In March 2004, the Corps released a pulse flow designed to encourage migration and passage of shad, sturgeon, and striped bass (as part of the ecological flow recommendations) from J. Strom Thurmond Dam, the largest and most downstream dam on the Savannah. Scientists from South Carolina Department of Natural Resources and University of Georgia worked downstream to collect data through electro-fishing and monitoring of groundwater levels in the floodplain.

A second pulse flow, designed to trigger migration and spawning of fall-run sturgeon, was released in October 2004.

Prior to both pulses, the Water Management Group in Savannah District temporarily stored water in the flood pool at J. Strom Thurmond Dam until the timing aligned with higher releases called for in the recommendations, great examples of interagency cooperation and coordination.



U.S. Army Photo

The Savannah River below New Savannah Bluff Lock and Dam is shown during the pulse release. The release caused changes in the river stage and an influx of organic material from a backwater area.

Sustainable Rivers work also is advancing at other sites across the country. The Corps and the Conservancy recently completed a first look at the hydrologic effects of Otter Brook and Surry Mountain Reservoirs on the Ashuelot River in New Hampshire and are scoping a feasibility study to continue those investigations and begin work on the West River in Vermont.

Also, in cooperation with U.S. Geological Survey, the U.S. Fish and Wildlife Service, the Bureau of Land Management, Arizona Fish and Game, and others, the Corps and the Conservancy organized a workshop last month to develop ecosystem flow recommendations for the Bill Williams River in Arizona.

Beyond the site-based work, SRP progress includes development of two joint Corps-Conservancy training courses, a personnel agreement that assigned a Hydraulic Engineer from the Corps to the Conservancy in support of the SRP, and start of the first joint software development project between the two organizations.

In November 2004, the Corps and the Conservancy held their first Partnership Conference highlighting the accomplishments of regional and national collaborations between the two agencies. During an SRP workshop held prior to the conference, attendees were asked to take a critical look at the SRP and its current directions.

Two of the most resonating responses were that the SRP has potential to improve the ecological sustainability of water management and is in many ways still searching for the means of support needed to best realize this potential. For conference proceedings visit the web site at www.hec.usace.army.mil/misc/2004_COE_TNC_Conference/index.html.

For details on the Sustainable Rivers work described in this article, please contact John Hickey (john.t.hickey@usace.army.mil) or Andy Warner (awarner@tnc.org).

For more information about the national Corps-Conservancy partnership or the SRP, contact Lisa Morales, Corps National Liaison to the Conservancy, (lisa.t.morales@usace.army.mil), or Ted Illston, Senior Policy Advisor for The Nature Conservancy, (tillston@tnc.org).

Editor's note: This is the first in a recurring series of articles about the Sustainable Rivers partnership between the U.S. Army Corps of Engineers and The Nature Conservancy.

Community invites Corps employees to join group

The Environmental Community of Practice (eCoP) is inviting U.S. Corps of Engineers employees to join the group.

"We've established an invitation register at https://surveys.nwd-mr.usace.army.mil/eCoP/ to allow people to voluntarily identify themselves as members of the eCoP and to identify those sub-eCoPs in which they might have interest," said Ken Gregg, team leader for the Environmental Community of Practice.

"This invitation register is much like a census so we can identify the population we are trying to serve," Gregg said. "As we develop tools, processes, and relationships with the eCoP to share knowledge, we will document this information for the future workforce.

"Many of us may not be around post-2012, but by participating in the community today we can leave a legacy of which we may all be proud," he said.

Although people who work in the Corps' environmental arena, whether it's Military Programs or Civil Works, are already members of the eCoP, the team is asking them to go ahead and register so both the eCoP and sub-eCoPs can reach out and provide them with appropriate information.

People who register will receive an electronic "Certificate of Participation" that can be printed and posted so others will know they are members of the eCoP.

For more information, contact the Headquarters USACE Public Affairs Office at 202-528-4285.

Ecosystem

Continued from Page 4

project reviews and evaluations on work performed by the districts, review documents and proposals, etc.

"The Ecosystem Center of Expertise gives the customer and Corps team members a central organization they can tap into to network with people who can assist with problems they encounter, a broker of sorts," Wilbanks said.

New members to the Corps of Engineers will benefit greatly from the national centers of expertise. "For years, we've developed contacts between the ERDC and the various Corps districts, so we know who to contact about specific issues that may come up during a project," Cofrancesco said.

"But as the older workforce turns the reins over to young engineers and scientists who haven't had a chance to meet and develop contacts, they don't know where to turn for assistance. The center gives them one-stop shopping for answers."

Customers and Corps team members can submit requests to the Center director, deputy director, or any member of the center's core PDT. The director or deputy will make a preliminary determination of the type service needed and pass the request to the core PDT, which will evaluate the request's needs and engage the applicable team members from around the Corps to work on the request.

Scopes of work are developed and cost estimates provided to the customer and work is completed as agreed upon. The customer is then provided a feedback/performance rating and information sheet on his project, which he fills out and returns to the PDT. A summary of the project action and results is then provided to the director, completing the process.

The goal of the center is to look at the broader aspects of project planning and management. "Our Corps districts were set up years ago based on drainage systems," Wilbanks said. "The Corps saw that drainage would be a factor determining boundaries and boundary delineation between states, etc.

"This is not a new concept. It's just becoming more prevalent. Where we may have only looked at water dynamics in the past, we're now looking at the entire ecosystem to keep it safe and functioning," Wilbanks said.

Cofrancesco and Vigh like to use Chief of Engineers Lt. Gen. Carl Strock's recent analogy to describe what the Ecosystem Center of Expertise is trying to accomplish.

General Strock's analogy for the environment was to compare it to a car his father owned years ago. He liked the car, but it had no air conditioning, so he modified the car, adding an air conditioning unit. The unit blew cold air, but it also leaked water on his feet and was quite noisy.

Today's new cars are functional, have better systems and are more efficient. There's no water on your feet from the air conditioning, and all you hear is a smooth, quiet hum while it's working. Strock said we need to take the new car approach to our projects today and that's what we intend to do with the National Ecosystem Center of Expertise.

A first use of the Center, as indicated by draft regulations currently under review, is a mandatory role in model certification for all planning activities. In the Center's case, that would include any biological-related modeling used in the project planning process.

"This was a recommendation from a 2003 task force that looked at improving corporate consistency and accountability in planning analysis," Vigh said.

For more information on the center, visit http://el.erdc.usace.army.mil/ecocx, or contact the Engineer Research and Development Center Public Affairs Office at (601) 634-2505.

U.S. Army Photo

Corps employees place filter fabric in a coastal zone. The fabric is structural component used to stabilize the shoreline.

New Web site supports Army-community partnerships

The Army now has a web site designed to help strengthen partnerships between the Army and the communities around its installations and ranges by providing practical tools, methods, examples, and information related to public involvement.

The *Army Public Involvement Toolbox* was developed collaboratively by a consortium of people from Army organizations engaged in public involvement to help meet the goals of the new *Army Strategy for the Environment* announced in October 2004.

The Strategy highlights the necessity of involving the public if the Army is to meet its goals and achieve sustainability.

The site, like the Strategy, places emphasis on the full range of activities needed to engage stakeholders. Known as "4Cs,"the Strategy emphasizes communication, coordination, consultation, and collaboration. Viewers can access the site at www.asaie.army.mil/pitoolbox.

"As the Army Strategy for the Environment states, 'the sustainable futures of our installations and our communities are inextricably connected,'" said Geoffrey Prosch, Acting Assistant Secretary of the Army for Installations and Environment.

"This new strategy mandates that the Army change how it communicates, moving beyond simply informing others of our activities, to actively collaborating with the public to forge mutually beneficial solutions regarding the limited resources we all share."

While the primary purpose of the Web site is to provide Army, Army civilian staff, and Army contractors engaged in public involvement with functional, proven techniques and information, the site is publicly accessible to reinforce the Army's commitment to public involvement, as well as to share information across other government agencies engaged in these types of activities.

"This is an initiative that intends to foster collaboration, and it has truly been a collaborative effort from the start," said Karen Baker, Senior Fellow for Strategic Policy at the Army Environmental Policy Institute.

Baker pulled together the Army Public Involvement Committee, a team of Army organizations engaged in public involvement to build upon recommendations from an Army senior leadership panel who recognized the need for more "how to" resources. The committee began content development, testing and consultation with other federal agencies, such as the Environmental Protection Agency, state agencies, and several non-governmental organizations as it assembled material for the site.

The project team selected content for the Web site with an emphasis on practical, hands-on information and organizing the information into functional 'buttons' for easy, quick linking to the information.

Viewers can quickly access guides on specific public involvement activities, locate training opportunities, find the latest regulations and policy statements on public involvement and link to other resources created by other agencies.

The site is designed for frequent updates, with viewers providing suggestions for future web postings through an e-mail feedback feature.

"The project team combined the excellent work already done by many Army organizations to create a 'one-stop shop' for all army practitioners, that extends far beyond the environmental arena.

The techniques and material can be applied to any issue in which the Army would need to actively engage with the public," said Col. Richard Breen, Director of Community Relations & Outreach for Army Public Affairs.

"The tool box is a great start to raising awareness and providing resources to the field, but it is only our first step in making the '4C' concept a reality," said Ray Fatz, Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health).

"We have much work to do to ensure that involving the public becomes part of how the Army does business."

From an Army News Service release.

Ninigret

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The problems for this area date back many years. Ninigret Pond was given a permanent breachway during the last century.

The most prevalent problem that has arisen with the permanent breachway is an increased rate of sedimentation in the pond, mainly in the form of a flood tidal shoal that continually expands and changes shape.

This flood tidal shoal has resulted in the loss of valuable eelgrass beds and shellfish habitat. Upland development over the last century has also resulted in the loss of valuable spawning habitat in Cross Mills Pond, a freshwater pond connected to Ninigret Pond.

The Corps of Engineers' Feasibility Report examined a host of alternative plans in order to develop a comprehensive restoration plan that minimized environmental impacts and project costs. The alternatives examined for the salt pond included: the no action plan; constructing a sedimentation basin; planting eelgrass on the shoal and constructing a sedimentation basin; dredging the shoal, planting eelgrass, and constructing the basin.

Alternatives for the fish passage project include: the no action plan; trapping and transporting; and constructing a fishway.

The recommended plan involves dredging about 40 acres of tidal shoal area in Ninigret Pond and planting eelgrass to restore aquatic habitat.

Eelgrass will be transplanted to dredged areas by removing plugs from nearby healthy donor beds or through direct seeding techniques. A 3.5-acre sediment basin will be dredged to prevent future shoaling.

Restoration efforts in the pond will have direct benefit to the fisheries of Block Island Sound. The project also involves construction of a concrete lined bypass channel with two fish ladders from Ninigret Pond to Cross Mills Pond. Restoring the migratory pathway of herring and other anadromous species to Cross Mills Pond will further improve the ecosystem through the restoration of about 20 acres of spawning habitat.

Increased use of the pond by anadromous fish will also provide fisheries and wildlife benefits to both Ninigret Pond and Block Island Sound.

Plans and specifications were initiated in September 2002. A Project Cooperative Agreement was signed May 28, 2003. A contract for the dredging portion of the project was awarded Sept. 30, to Inner Space Services, Inc., of Casco, Maine.

Dredging work was to have been completed last month. The fishway portion is projected to be completed later in 2005. The eelgrass improvements are projected to be completed over several growing seasons from 2005-2007.

For information contact the New England District Public Affairs Office at (978) 318-8238.

Micromodels help with river habitat diversity

By GEORGE STRINGHAM
Memphis District

Fishermen and bird watchers may soon have additional recreation opportunities along the Mississippi River. Members of the Memphis District met recently with other federal and state agency representatives to demonstrate some options for habitat restoration along the river above the Hernando Desoto Bridge.

At the District's micro modeling lab, John Rumancik, Wayne Max and Andy Gaines showed members of the U.S. Fish and Wildlife Service, the Lower Mississippi River Conservation Committee, the Tennessee Wildlife Resources Agency and the Arkansas Game and Fish Commission a model they had been experimenting with over several months.

"What we're trying to do is go into some of the back channels and put in chevrons or put notches in some of the existing dikes," Rumancik said. "If we can increase the diversity in the topography, we can increase the diversity of species."

At the same time, they are trying to increase habitat area for threatened least tern by creating isolated sand bars (nesting habitat for least terns).

Craig Uyeda, of the Arkansas Game and Fish Commission, has had some experience with successful projects to diversify habitat along the Arkansas River.

"Several years ago, we took some of the data from the White River Comprehensive study and applied it to the Arkansas (River)," Uyeda said.

"We've had a lot of success with some of the stuff that John (Rumancik) and Wayne (Max) are trying in this model."

While environmental habitat was the focus of the meeting, Rumancik said navigation safety was the highest priority.

"The model was originally built so that River Engineering could try to solve some of the dredging problems along this reach of the river," he said.

"That's why whenever we do something (for habitat restoration), we must also look at the impact on navigation."

Rumancik also said that access to the back channels by sportsmen is another consideration. He added that one of the several things they looked at was the ability to get to some of these habitats when the river was at lower stages.

"What's the point of putting this stuff in there if fishermen can't get in at intermediate river levels," he said.

Rumancik emphasized that an important part to remember, though, is this is just the first stage and that the cooperation level that has existed to this point needs to continue if anything is to come to fruition.

"What we are trying to achieve is a win, win, win situation for all. Win for navigation. Win for recreation. Win for habitat," he said.

For more information contact the Memphis District Public Affairs Office at (901)544-3005.

Photo by George Stringham

Lindsey Lewis, U.S. Fish and Wildlife Service (R), watches as Rob Todd adjusts one of the dikes to see how it affects the contour of the riverbed.

EPA sets Community Involvement Conference

The eighth annual U.S. Environmental Protection Agency Community Involvement Conference and Training is set for Buffalo, N. Y., July 12-15. The theme of this year's conference is, "Building Bridges Through Strong Partnerships."

The annual conference is designed for EPA and its federal, state, local or tribal partners who plan and implement EPA's community involvement, partnership, outreach and education programs.

The conference provides a diverse and unique educational program—one in which presenters and participants freely exchange information and learn from each other.

Approximately 40, 90-minute concurrent sessions will be conducted the first two-and-a-half days of the conference (beginning on Tuesday morning, July 12, and concluding at noon on Thursday, July 14).

Four- and eight-hour training sessions will be presented over a two-day period, beginning the afternoon of July 14, and concluding by noon on July 15.

The conference also includes several keynote presentations, evening social activities, open time sessions, field trips, an exhibit room, and a poster session.

For information,visit the www.epancic.org/2005/overview.cfm.

Department of Defense hosts research symposium, workshop

The Department of Defense Strategic Environmental Research and Development Program and the U.S. Army Corps of Engineers Construction Engineering Research Laboratory/Engineer Research and Development Center will sponsor a research symposium and workshop on Threatened, Endangered, and At-Risk Species (TER-S) on DoD and adjacent lands.

A plenary session will describe DoD's perspectives and those of the TER-S research community. A comprehensive technical program will follow consisting of nine sessions to address desert, forest, and grassland ecosystem issues. Current and recently completed research on mammals, birds, reptiles, amphibians, freshwater fish, invertebrates, and higher-level plants will be highlighted.

The goal of the symposium and workshop is to define and evaluate threatened, endangered, and at-risk species research on or adjacent to Department of Defense lands.

The event will be held from June 7-9**,** at the Wyndham Inner Harbor Hotel in Baltimore, Md. On-line registration will be available through May 23.

Additional information can be found on the web site at www.serdp.org/TESWorkshop, or questions can be sent by email to TESWorkshop@hgl.com.

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highly contaminated sludge.

The sludge generated by this process, as well as fines initially removed by the hydrocyclones, is consolidated into a highly concentrated sludge that contains high levels of arsenic. The sludge is then shipped to an approved offsite hazardous waste landfill for disposal, as are the oversize materials.

Some 94 percent of the site's soils are treated and returned to the site as clean backfill, with the remaining 6 percent shipped to an approved offsite landfill in the form of oversize materials (gravel, roots and twigs, miscellaneous debris) and sludge. The treated sand is returned to the excavation. Some clean topsoil from an approved offsite source will be used to restore the site to its original grade and support revegetation.

How well does it work?

Since the soil washing plant began operation in October 2003, a rigorous sampling and analysis program has confirmed that arsenic concentrations are below the 20 part-per-million cleanup level for backfill. To date, only 1,300 tons (less than 2 percent) of the 100,000 tons of soil processed have exceeded that threshold and required retreatment.

As for innovation, this project boasts several "firsts":

■ Use of soil washing technology to remediate an arsenic-contaminated Superfund Site.

■ Use of the traditional mining processes of wet screening and hydrocyclones to remove those soil fractions which are not amenable to soil washing (fines and oversize materials).

■ Use of chemical leaching to remove the iron and arsenic coatings.

■ Incorporation into the soil treatment process of a rotating ball mill, which will use physical grinding with 1-inch diameter ceramic balls to remove arsenic coatings from higher-concentration, or "hot," feed materials (greater than 500 parts per million arsenic).

■ Implementation of an extensive coring and sampling program for the old Vineland Chemical Plant's foundations, with the result that concrete and asphalt areas previously assumed to require disposal as hazardous materials have been reclassified as contaminated but "nonhazardous," resulting in savings to the project of approximately $1.5 million.

Also, while not a "first," chemical stabilization of contaminated oversize material to render it "nonhazardous" for disposal will save the project approximately $350,000.

As of December 2004 the ball mill has not been used; instead the contractor has been able to successfully blend these "hot" materials with lower grade feed material (20 to 40 parts per million) to produce a combined feed stream with a concentration of approximately 80 parts per million. This combined feed has been successfully treated without the grinding step.

By the end of November 2004, approximately 25 percent of an estimated 268,000 tons of contaminated soils onsite had been successfully treated and returned to the ground as backfill.

Project completion date is currently projected as September 2006, six months ahead of schedule—thanks to process improvements by Sevenson and ART that increased the plant's treatment rate from 52 to 70 tons per hour and will end up trimming about $1 million from the project's $23.5 million budget.

Working with its contractors and EPA, the Corps will continue plant optimization efforts with the goal of additional project savings.

"This soil washing treatment plant has played an invaluable role in expediting and enhancing the cleanup of one of New Jersey's most complex and challenging Superfund sites," says EPA Region 2's Ron Naman, Remedial Project Manager for the Vineland Chemical Company Superfund Site.

"Its success offers great promise for use on other site operable units or for similar efforts within the Superfund program."

For more information contact the Public Affairs Office, Philadelphia District, at (215)656-6515.

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